

January 14, 2005

**CERTIFIED MAIL
RETURNED RECEIPT REQUESTED**

Mr. Dean Kunihiro
Senior Vice President
Licensing and Regulatory Affairs
Waste Control Specialists LLC
5430 LBJ Freeway, Suite 1700
Three Lincoln Centre
Dallas, Texas 75240

Re: Third Administrative Notice of Deficiency
Radioactive Material License, Andrews County
Proposed Low-Level Radioactive Waste License No. RW4100
Regulated Entity Number: RN104392790
Customer Reference Number: CN600616890

Dear Mr. Kunihiro:

Thank you for your December 17, 2004, response to our administrative review of the amended application for a license to authorize near-surface land disposal of low-level radioactive waste (LLRW). Our review of your responses to noted administrative deficiencies indicates that the application remains administratively incomplete with regard to TCEQ rules. As was noted before, the test of administrative completeness is a determination whether there is sufficient information to allow a technical review (30 TAC §336.807(d)). If, for example, the administrative review results in a finding that some information presented by the applicant consists essentially of statements of the applicant's beliefs or conclusions, but apparently unsubstantiated by reviewable data, then the applicant is deemed to have not met the test of sufficient information and the application, as it stands, is considered to remain administratively incomplete.

While many issues raised in the last administrative review have been satisfactorily resolved in terms of administrative completeness, others remain unresolved, or have only been partially resolved. The executive director may require statements or data from an applicant to enable the commission to determine whether the application should be granted or denied. The information that must be submitted to make the application administratively complete is listed as Attachment 1, "Administrative Deficiencies." Although we have attempted to identify all the relevant sections, appendices, figures, tables, etc., associated with the listed deficiencies, it is the responsibility of the applicant to address all applicable areas related to noted deficiencies.

Mr. Dean Kunihiro
Page 2
January 14, 2005

Re: Proposed Low-Level Radioactive Waste License No. 4100

During our administrative review, we also noted areas where additional information/clarification will be necessary to further the comparative merit and technical reviews of the application. Although these areas are not part of our determination of administrative completeness, we continue to notify you of the same, in advance of subsequent reviews, in order to expedite the overall review process.

These requests for additional information are listed in Attachment 2, "Additional Information." Under separate cover, labeled "CONFIDENTIAL," we are submitting Attachment 3, "Additional Information", and Attachment 4, "Administrative Deficiencies", which include requests for clarification or additional information on the financial sections of the application that you have designated as "CONFIDENTIAL."

Please be aware of the importance of providing this "Additional Information," as it could be critical to assessing the general merit of the application should it achieve administrative completeness, as well as materially affect an ultimate evaluation of its technical merit. In order for them to be taken into consideration in completion of the Comparative Merit Review now underway concurrently with the Administrative Review, we would need to have the responses to Attachments 2 and 3 within 30 days.

Feel free to submit revisions, as necessary, to effect corrections or clarifications beyond the scope of noted deficiencies with your response.

Please submit an original response and eight (8) copies of your application revisions, including the signature page of the application. You are also required to post the final administratively complete application in a publicly accessible location, and to the website, including all amendments and or supplements to the application (30 TAC §336.805(4)).

Failure to submit the information requested in Attachment 1 within thirty (30) days of the date of this letter, pursuant to 30 TAC §336.807, will cause the application to be removed from our list of pending applications and the executive director shall return the incomplete application to the applicant.

If you have any questions regarding this matter, you may contact Mr. Wade M. Wheatley, P.E., Director, Waste Permits Division at (512) 239-6787, or you may write him at the following address: TCEQ, Office of Permitting, Remediation & Registration, Waste Permits Division, Director's Office (MC-126), P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

David L. Howell, P.E., Manager
Permits Administration Review Section (MC 161)
Registration, Review and Reporting Division

DLH/pm

Attachments

cc: Mr. Stephen L. Cook, P.E., Cook-Joyce Inc. - Austin
Ms. Nancy Neuse, Cook-Joyce Inc. - Austin

Attachment 1

Administrative Deficiencies 14 January 2005

Instructions, Item 12

All geoscience documents must be prepared by or under the supervision of a Texas licensed professional geoscientist (P.G.), in accordance with Section 8.01 of the Texas Geoscience Practice Act. Geoscience includes the science of the earth and its origin and history, the investigation of the earth's environment and its constituent soils, rocks, minerals, fossil fuels, solids, and fluids, and the study of the natural and introduced agents, forces, and processes that cause changes in and on the earth. All geoscience documents submitted in this application must bear the full name, signature, date, license number, and seal of the geoscientist under which the document was prepared. If more than one P.G.'s work is contained in a document, both seals are required on the document and the limits of their work clearly indicated. [22 TAC, Part 39, Chapter 851]

Comment: Volume 1A, Figure 8.1-1, and Volume 3, Figures 6.3-1 and 6.3-2 were not sealed as stated in the applicant's Dec. 17, 2004, "Response to the Second Administrative Notice of Deficiency" (ANOD2). Attachment 3.0-3.12 of Volume 8A, "Geotechnical Evaluation," does not have a signature page by a registered professional engineer, as stated. A revised cover page for Volume 5, Subsection 6.5-1.7, Additional Boring Locations, was not located, either. Please submit these missing documents.

Section 2.2.3

Describe and quantify socioeconomic effects on surrounding communities of operation of the licensed activity and of associated transportation of low-level radioactive waste. [THSC 401.112(a)(3)]

Comment: Please include the referenced resolutions of support from the Andrews City Council and Andrews Industrial Board of Directors, in addition to the resolution of the Andrews County Commission found as Attachment A of Section 1.

Section 2.6.1

Describe and quantify area and site characteristics including geotechnical features, geochemistry, soils, and natural radiation background. [30 TAC §336.708(a)(3)]

Comment: Section 2.10 is not included in the revised application as stated by the applicant. Please provide Section 2.10.

Section 3.3

Provide accurate drawings and descriptions of on-site buildings including, but not limited to, construction, foundation details, instrumentation, ventilation, plumbing and fire

suppression systems, and types of intruder barriers; onsite traffic systems; physical security system; survey control program; areas of waste storage. [30 TAC §§336.707(5), 305.54(f)]

Comment: All engineering plans, specifications, and other related documents must be prepared, sealed, signed, and dated by or under the supervision of a Texas licensed professional engineer (P.E.), in accordance with 22 TAC §137 and Chapter 1001 of the Texas Engineering Practice Act. Please seal the submitted drawings and analyses of the foundation analysis in Appendix 3.3-1 and utility layout and details in Appendix 3.3-2. Also, please ensure that each sub-section of Appendix 3.0-3 has been prepared by or under the supervision of a Texas licensed professional engineer and is properly sealed.

Section 3.7.1

Describe the design basis natural events or phenomena and their relationship to the principal design criteria. [30 TAC §336.707(2)]

Comment: Please address the short-term stability considerations discussed in the previous ANOD (issued November 17, 2004). Instead of providing a design to accommodate a Probable Maximum Flood for short-term stability, the submitted design envisions a less severe natural event. Please provide justification for this design standard and how this will meet performance objectives of §336.728(e).

Section 4.2

Describe construction of the disposal facility, including construction methods of the disposal units. [30 TAC §§336.707(5), 305.54(f)]

Comment: A description of the final cover system was not found within the application. Describe the construction and installation of the final cover system. Describe specific installation techniques for each layer (such as moisture addition and compaction) that must be employed, and specify test methods to ensure successful installation. Also, please demonstrate how the liner and its components will meet the requirements of §336.729(f) after disposal. Procedures indicating that the contractor will proceed after WCS review and approval is inadequate. (Volume 9, Appendix 4.2.3) Describe the construction and maintenance of traffic access corridors during the construction of the facility. .

Section 5.5.1

Provide an Operating and Emergency Procedures Manual that provides detailed procedures for receiving, handling, storing, processing, and disposal of waste. Emergency procedures shall include a spill detection and cleanup program for the site and associated transportation of waste. [THSC §§401.112(a) (12), 401.112(a)(16)] & [30 TAC §336.707(9)]

Comment: Additional procedures must be submitted to provide details of the LLRW facility operations, as required by 30 TAC §336.707(8) - (10) and 30 TAC §336.726. A list of these procedures is shown in Table 1, which is provided at the end of this attachment. If you believe a

particular procedure is not applicable to your operations, then provide a thorough justification for not addressing the topic or for handling the topic in some other manner. If you believe the topic is already sufficiently covered in the application, then please submit a reference to the appropriate application section(s) and explain why the current response is sufficient.

Section 8.2.3

Describe the waste anticipated to be generated during closure operations. The information should be sufficient to enable an independent staff assessment of potential closure costs and impacts. The waste description should thus provide information similar to that discussed in item 8.2.2(4). [THSC §401.112(a)(8)] & [30 TAC §§336.707(6), 305.45(a)(8)(B)(ii)] & [NUREG 1199, Section 6.1.1]

Comment: The applicant's referenced Section 6.1.2 does not provide a complete description of the types, quantities, and activities of wastes that will be generated during the decommissioning of the disposal sites. Please provide a complete description.

Table 1

Required LLRW Facility Procedures

Administrative Procedures

- Procedure Review and Approval [NUREG-1199, Section 8.6 and NUREG-1200, Review Plan 8.6]
- Temporary Changes to Procedures [NUREG-1199, Section 8.6 and NUREG-1200, Review Plan 8.6]
- In addition, in Section 5.5.3 of its application, the applicant said the following procedures would be provided:
 - Inter-site Transfers, Receipts, and Dispatches [30 TAC §336.331, NUREG-1199, Section 8.6, and NUREG-1200, Review Plan 8.6]
 - Procedure Development [30 TAC §336.707(7)]
 - Administrative Quality [30 TAC §336.707(7)]
 - Management Review [NUREG-1199, Section 8.5 and NUREG-1200, Review Plan 8.5]

Personnel Safety Procedures

- Annual Radiation Safety Review [30 TAC §336.304(a),(c), NUREG-1199, Section 8.5(2) and WCS App., QA-18.1, 4.3.2.2]
- Radiation Survey Review and Evaluation [30 TAC §336.707(7) and NUREG-1199, Section 8.5(3)]
- Respiratory Protection Equipment Issuance [30 TAC §336.321(a)(3)(D)(ii), (iv)]
- Respirator Maintenance and Cleaning [30 TAC §336.321(a)(3)(D)(vii)]
- Respiratory Protection Fit Testing [30 TAC §336.321(a)(3)(D)(ii)]
- Fire Safety/Protection System [30 TAC §336.707(5), NUREG-1199, Section 3.4.3, and NUREG-1200, Review Plan 4.1, Section 3.4.3]

Health Physics Procedures

- Cask Inspections and Surveys [NUREG-1199, Section 4.1(3), NUREG-1200, Review Plan 4.1 Section 3.2(2)]
- Covered Disposal Unit Surveys [NUREG-1199, Section 7.4(1) and NUREG-1200, Review Plan 4.3, Section 3.2.4]
- Waste Classification Verification Testing [30TAC§305.54(e), NUREG-1199, Section 4.1(4) & (5) and NUREG-1200, Review Plan 4.1 an 8.6]
- Please include **decontamination** procedures, should a standard be exceeded, for:
 - Operational Equipment and Transport Vehicles [NUREG-1199, Sections 4.1(3) and 8.6]
 - Casks and Shipping Containers [NUREG-1199, Section 4.1(3)]

Operating Procedures

- Disposal Unit Construction [30 TAC §336.730(e) and NUREG-1200, Review Plan 3.3.1, Section 4.3.1]
- Transport Vehicle Movement to Disposal Unit [NUREG-1200, Review Plan 4.2, Section 4.3.1]
- Canister Emplacement [NUREG-1199, Section 4.3 and NUREG-1200, Review Plan 4.3, Section 3.2.2]
- Disposal Unit Closure [NUREG-1199, Section 4.3 and NUREG-1200, Review Plan 4.3, Section 3.2.6]
- Temporary Waste Demurrage [NUREG-1200, Review Plan 4.2, Section 4.3.2]

Regulatory Compliance Procedures

- Notification of Regulatory Agencies [NUREG-1200, Review Plan 7.4, Section 4.3.3, NUREG-1199, Section 9.1.2, and 30 TAC §336.335]
- Radiation Exposure Records [NUREG-1200, Review Plan 7.4, Section 4.3.3, NUREG-1199, Section 9.1.2, and 30 TAC §§336.338 through 346]
- Visitor Exposure Reports [NUREG-1200, Review Plan 7.4, Section 4.3.3, NUREG-1199, Section 9.1.2, and 30 TAC §§336.347 & 355]
- Exposure Data Review and Reporting for Routine and Non-Routine Operations [NUREG-1200, Review Plan 7.4, Section 4.3.3, NUREG-1199, Section 9.1.2, and 30 TAC §§336.335, 352 through 355]
- Sealed Source Control and Inventory [NUREG-1200, Review Plan 7.4, Section 4.3.3, NUREG-1199, Section 9.1.2, and 30 TAC §336.323, 324, 350]
- Recording of Burial Data [NUREG-1200, Review Plan 4.3, Section 4.3.4, NUREG-1199, Section 9.1.2, and 30 TAC §336.740]

Environmental Monitoring Procedure

- Confirmation of Operational Status of Meteorological Monitoring Station [NUREG-1200, Review Plan 4.4, Section 5.2 and NRC Regulatory Guide 1.23, “Onsite Meteorological Programs”]

Additional Information
14 January 2005

General Comment Regarding References to Parts of the Application: When referring to anything in the application, please make references which include (1) the volume number; (2) the application appendix number (if applicable); (3) the section number (if applicable); (4) the report-level appendix number (if applicable); (5) the figure number (if applicable); and (5) the table number (if applicable). This will help facilitate locating information within the application. For the same reason, we request that each figure and table be numbered in as logical a way as is practicable.

General Comment Regarding Published References: Please provide the requested reference information in Table 2.

Section 1.19

Submit as “Attachment B” a copy of the warranty deed or other conveyance showing that the right, title, and interest in the land, including mineral interests, on which the land disposal facility or facilities are proposed to be located is owned in fee by the applicant. If land, including mineral interests, is not owned in fee by the applicant, indicate how the requirements of §§336.710 and 336.734 will be addressed. [30 TAC §336.807(d)(9)] & [THSC §401.204]

Comment: Appendix 1.19.2, Exhibit C, Updated Ownership Report, shows three tracts of land comprising Section 25 totaling approximately 606 acres. Please explain why Section 25 is less than 640 acres in total area.

Comment: Please describe the purpose of the Leasehold Ownership section of Appendix 1.19.2, Exhibit C, Updated Ownership Report.

Section 1.22

Describe the activities conducted by the applicant which require a permit or license from a regulatory authority. [30 TAC §305.45(a)(5)]

Comment: Table 1.24 shows no authorizations issued under the Texas Radiation Control Act (TRNA); however, two licenses from the Texas Department of State Health Services (TDSHS) are indicated. Please amend the table accordingly. Further, a TSCA authorization from the Environmental protection Agency (EPA) is referenced in Table 1.24, but no supporting information is provided regarding that authorization. Please provide this information.

Section 1.24

Indicate (by listing the permit/license number(s) in the column below) all existing, pending, or interim status permits or licenses; permits-by-rule; state and/or federal permits or other approvals which pertain to pollution control or waste management conducted by your facility. [30 TAC §§305.45(a)(7), 336.708(a)(12)]

Comment: Please provide supporting information regarding the TSCA authorization from the EPA referenced in Table 1.24.

Section 2.2.3

Describe and quantify socioeconomic effects on surrounding communities of operation of the licensed activity and of associated transportation of low-level radioactive waste. [THSC §401.112(a)(3)]

Comment: Please describe positive and negative impacts on areas of secondary impact (i.e. state of Texas, regions affected by the transportation of waste).

Comment: Please discuss *perceived* costs and benefits to areas of secondary impact, such as the state of Texas and the regions affected by transportation of low-level radioactive waste.

Comment: Please include plans to inform the public about transportation routes, schedules and emergency procedures.

Comment: Please provide data/substantiation for the following declaration on page 2-29: “the primary reason for widespread acceptance of the proposed project within the R.I. is that the management philosophy is to conduct an open, timely and responsive dialogue with the representatives of state and local government as well as with local stakeholders.” How does the applicant maintain this dialogue? What methods are used to establish this dialogue (i.e., public meetings, hotline, etc.)? How is the effectiveness of this dialogue evaluated?

The applicant says in its October 18, 2004, response to administrative deficiencies, “Working closely with community leaders and public meetings are the primary means of establishing and maintaining public dialog.” This might answer the first questions, but it does not address the question about how the effectiveness of this dialogue is evaluated. Answering this question requires a qualitative assessment of existing public relations methods.

Comment: Please provide further explanation for the sampling method used in the community perception survey. Explain the decision to use a sample that is not representative in terms of race/ethnicity, income and education.

Comment: Please provide further information on how the community perception survey responses from Andrews County differ from the survey responses from Lea County.

Comment: Please provide further information on how the community perception survey responses vary depending on key variables (ethnicity of speaker, gender, age, occupation, income).

Comment: Please provide a copy of the survey questions used for the community perception survey.

Section 2.3.1

Describe and quantify area and site characteristics including air quality, meteorology, climatology, and natural hazards. [THSC §401.112(a)(1)] & [30 TAC §336.708(a)(3)]

Comment: Please include meteorological data in accordance with NRC Regulatory Guide 4.18, which says, “State the sources of this information and data, and include data collected from the onsite meteorological measurement program.” Also, please include information on the representativeness of the data for the proposed site. Please provide specifications on the meteorological data measurements recorded on-site, and state the limitations and accuracy of the input data. [NUREG-1200, SRP 6.1.5.2, Sections 2.2(2) & 2.2(3)].

Among the questions that should be addressed, for example, are: Which instruments were used to measure wind speed, humidity, etc.? How was performance of the instruments determined? What were the overall capture rates of the instruments, how many data records were recorded, and what were the instruments’ poorest performance in a single month? What are the limits of the instruments used? What are the instruments’ level of accuracy? It would also be helpful to include graphs indicating the diurnal variation of the average hourly precipitation during the period recorded (2000-2003) and for each season that was recorded on-site.

Comment: Provide input and output of the AERMOD computer program of the site in order to model air dispersion and evaluate the impact of atmospheric emissions on air quality. AERMOD takes advantage of boundary layer concepts and turbulence theory, which is physically more realistic. MET data can be found on the TCEQ website, and terrain data can be found either at the TNRIS website or USGS website.

Comment: Please provide a paleo-climate study of the region.

Section 2.4.1

Describe and quantify area and site characteristics, including surface hydrology. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Although the drainage features referred to in Section 2.4.1 of Volume 1 of the Application might be intermittent water bodies, they should be included in any description and scientific analysis of surface hydrology. For example, NRC Regulatory Guide 4.18 says, “baseline water quality of water bodies adjacent to the site should be provided, including, for

example, pH, alkalinity, suspended solids, specific conductivity, biological oxygen demand, turbidity, total dissolved solids, dissolved oxygen, and the natural background radiation levels.” Please provide this information for Baker Springs and the ephemeral onsite playas.

Comment: Please state how many days per year Baker Springs and the ephemeral onsite playas contain water.

Section 2.5.1

Describe and quantify area and site characteristics including geology, seismology and topography. [THSC §401.112(a)(1)] & [30 TAC §336.708(a)(3)]

Comment: In response to our first comment on this section in ANOD2, Attachment 1, the applicant stated that the following figures “cannot be revised” to show the outlines of the waste facilities: Volume 4, Appendix 6.5-4, Figure 1; Volume 4, Appendix 6.5-6, Figures 2 and 3; Volume 7, Appendix 2.6.2, Figure 2-1; and Volume 8, Appendix 2.10.2, Figures 1-1, 2-1, and 2-2. We request that the applicant reconsider and make an effort to superimpose at least an approximation of the federal and compact disposal facility outlines on these figures, as this would be very helpful to our review of the application.

Section 2.5.2

Demonstrate that the disposal site avoids tectonic processes such as faulting, folding, seismic activity, or vulcanism that occur with such frequency and extent as to significantly affect the ability of the disposal site to meet the performance objectives of 30 TAC §336.723, or may preclude defensible modeling and prediction of long-term impacts. [30 TAC §336.728(I)]

Comment: Please provide additional evidence besides apparent cross-cutting relationships, that site-related faulting and folding ended prior to Cretaceous deposition. An example of additional evidence would be radiometric age dating, to demonstrate and substantiate the assertion.

Section 2.6.1

Describe and quantify area and site characteristics including geotechnical features, geochemistry, soils, and natural radiation background. [30 TAC §336.708(a)(3)]

Comment: Please explain the calicheification process that produced the caprock caliche.

Section 2.7.1

Describe and quantify area and site characteristics including ground water hydrology. [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Please demonstrate in detail the appropriateness of using the hydrogeologic properties of the Yucca Mountain Paintbrush and Calico Hills Formations as input parameter values for the proposed disposal site's sands and clays for the purpose of groundwater modeling.

Comment: The applicant has indicated its use of the TOUGH2 Model. Please provide the actual model information (description, assumptions, input parameters, model runs, conclusions, etc.) from the site for this model. Also, has the applicant used a dual-permeability model for the site? If so, please provide the same model information for such a model as requested for the TOUGH2 Model.

Comment: In its response to our first comment on this section in ANOD2, Attachment 1, the applicant stated that some of the hydrogeologic parameter values we requested are in Volume 3, Tables 6.5-2 and 6.6-4. Please identify and match the hydrogeologic parameter values in Volume 3, Table 6.5-2 with the appropriate zone designations (80-foot sand, 125-foot sand, etc.), as well as the TOUGH2 model layer designations (L1, L2, etc.) shown in Volume 3, Figure 6.6-7.

Comment: Volume 3, Table 6.6-4, "Input Parameters for Claystone, Sandstone, and Fracture used in TOUGH Model," does not give input parameters for Layer 2. Is Layer 2 the "80-foot sand," and what input parameters is the applicant using for it?

Comment: Demonstrate the appropriateness of using the fracture parameter values in Volume 3, Table 6.6-4 to globally represent all site-related fractures in the TOUGH2 Model.

Comment: In its response to our first comment on this section in ANOD2, Attachment 1, the applicant states that the hydraulic conductivity values for the 125-foot sand and lower sands in the Cooper Canyon Formation are based on the values of sands other than the 225-foot sand. Please explain how this is appropriate and identify which other sand(s) was used to estimate the value for the 125-foot sand and lower sands of the Cooper Canyon Formation.

Comment: In its response to our second comment on this section in ANOD2, Attachment 1, the applicant stated: "The 80 foot and the 180 foot zones are discontinuous and the contacts are insufficiently defined to confidently represent them with isopach maps." The subsurface characterization, particularly of the subsurface intervals containing the landfill, is essential to the development of a conceptual model of the site. The rules in 30 TAC 336.728(a) state: "The disposal site shall be capable of being characterized, modeled, analyzed, and monitored." NUREG 1199, *Standard Format and Content of a License Application for a Low-Level Radioactive Waste Disposal Facility* states: "Isopach maps of near-surface stratigraphic units, the candidate horizon, the bedrock surface, and other units that are part of the disposal system should also be provided."

The applicant's stated insufficiency of subsurface knowledge may be deemed as a technical inadequacy of the application during the technical review process. Additional investigation, which may include more borings, may be warranted in the future to more fully characterize the subsurface. Please consider that if this application was instead an application to permit a

municipal solid waste landfill site in Texas (refer to the TCEQ/MSW rules in 30 TAC §330.50(c)(5)), the minimum number of borings for the compact waste facility (CWF) and the federal waste facility (FWF) would be approximately 12 and 19, respectively. Volume 3, Figure 6.5-2, “Boring Locations,” however, indicates that there are only 3 borings within the CWF footprint and 10 borings within the FWF footprint.

Comment: In its response our third comment on this section in ANOD2, Attachment 1, the applicant makes references to a “water table” at around 140 feet and a travel time to this water table “in excess of 50,000 years.” Please address the following:

- Is the 225-sand considered by the applicant to be a confined aquifer, or a water-table aquifer? What about the 80-foot, the 125-foot, the 180-foot, and the 600-foot sands. Are these confined?
- Is the 140-foot water level more properly a “potentiometric surface?”
- Where does the applicant place the boundary between the unsaturated (vadose) zone and the saturated zone for the disposal facility?
- What exactly does the “in excess of 50,000 years” travel time mean? This travel time is from what to what? Is this from the base of the federal waste disposal facility to the potentiometric surface of the 225-foot sand?
- Please provide applicable data which demonstrates how the “in excess of 50,000 years” travel time was determined. Is this roughly the same estimate given as “more than 45,000 years” in Volume 2, Appendix 2.5.1, page 2.5.1-31?

Section 2.9.1 and Appendix 2.9.1

Describe and quantify area and site characteristics including ecology [THSC §401.233(b)] & [30 TAC §336.708(a)(3)]

Comment: Please provide written documentation or some other form of personal communication with personnel from the Texas Parks and Wildlife Department and/or the U.S. Fish and Wildlife Service regarding the likelihood of threatened/endangered species occurring near the site, rather than relying on these agencies’ web sites and observations made in the field. A “Rare Resources Request Review” form is available on the TPWD web site and can be used to obtain a written evaluation from TPWD of rare and threatened/endangered species expected to occur in the immediate vicinity of the site.

Section 3.3

Provide accurate drawings and descriptions of on-site buildings including, but not limited to, construction, foundation details, instrumentation, ventilation, plumbing and fire suppression systems, and types of intruder barriers; onsite traffic systems; physical security system; survey control program; areas of waste storage. [30 TAC §§336.707(5), 305.54(f)]

Comment: Please provide accurate drawings and descriptions of on-site buildings and facilities, including, but not limited to: pavement design, ventilation, plumbing, fire suppression, and instrumentation details. [30 TAC §336.707(5)] Drawings must be provided and must contain information sufficient to conduct relevant analysis. For example, the design description of an HVAC system must be sufficient to conduct analysis and make an assessment of worker safety. Procedures given in the application indicating that a contractor will prove to WCS the sufficiency of the system is not acceptable.

Comment: Please provide plans showing the construction and design of the extension to water and wastewater lines for the onsite facilities. Include demand and capacity of the systems, as well as parameters, material properties, and resulting output used in the design. Show flow lines of the water and wastewater systems and the location where the water line will connect to the existing water line. Demonstrate that the increase of demand can be handled by the existing system and provide completed permits from the county indicating their approval to engage in septic and water line extension activities. [NUREG-1200; SRP 3.4.1 Section 4.3.3]

Comment: The new Appendix 3.0-3.4 states that the drawings for the decontamination and staging pads “indicate a variable curb height from about 16" at the collection box to 9" along the short sides. However, Drawing C.014 indicates a 6" curb height. Please reconcile.

Comment: Please address the apparent confusion in Appendix 3.0-3.4 with regards to the variable “D” in the “Capacity of Decon and Staging Pads” calculations. Does it really belong in the V_{req} equation? How is the V_{pad} value calculated?

Comment: Please address stored leachate in storage tanks. How long is the contaminated water stored in the leachate storage tanks? What plans or contingencies are in place in the case that the tanks become full? What method is used to determine the current water level in the tanks?

Comment: Please address the units for the calculation in Appendix 3.0-3.4. The calculations for the “Leachate Storage Tanks” in Appendix 3.0-3.4 indicate that the volume of the leachate tank is in ft^3 . It appears the units should be in gallons.

Section 3.5.1

Describe the design features of the land disposal facility and the disposal units. For near-surface disposal, the description shall include those design features related to integrity and structural stability of covers for disposal units. [30 TAC §§336.707(4), 305.54(f)]

Comment: WCS comments that the reserve clay fill will be available to re-form and self-heal in the event of localized settlement. Provide numerical analyses to estimate localized settlement, and demonstrate that the material properties of the clay is sufficient to self heal across the predicted settlement.

Section 3.5.2

Demonstrate that the covers are designed to minimize water infiltration, to direct percolating or surface water away from the disposed waste, and to resist degradation by surface geologic processes and biotic activity. [30 TAC §336.729(d)]

Comment: Please insure consistency in runoff calculations. In other words, if PMP overtops primary diversion ditch, please include this additional runoff to berm runoff calculations.

Comment: Please provide demonstration on how the Manning's number, "n", was derived for channel calculations.

Comment: Please quantify runoff for the containment ditch on the 50' ledge in the disposal cell.

Comment: The response to the original comment in this section refers to "revised Section 3.5.3". However, this section was not revised. Please reconcile this reference.

Section 3.6.1

Describe those design features related to infiltration of water, contact of wastes with standing water, and disposal site drainage. [30 TAC §§336.707(4), 305.54(f)].

Comment: Please provide depth of flow in primary and secondary ditch profiles in Appendix 3.0-3.1.

Comment: Show flow paths of the times of concentration used for the different areas in Figure 1 of Appendix 3.0-3.1.

Comment: Please address the apparent errors, dealing with simple addition, for the time of concentration calculations for Areas 2 and 3 in the Calculation Details of Appendix 3.0-3.1.

Comment: Please clearly delineate basin areas for the Bern Area Location in Figure 1 of Appendix 3.0-3.2.

Comment: It appears that the diversion ditches are sending runoff to a small, existing pond /depression. Please evaluate the effects of the storm water on this pond. To what level will the water in the pond rise for each storm event? Also, consider retrofitting the pond to address sedimentation, filtration, and detention issues.

Comment: It appears that runoff from the disposal facility will become concentrated flow in various natural troughs just south of the facility. Please quantify this runoff, its effects on downstream facilities, and measures to mitigate its erosive effects downstream.

Comment: Please address how the stormwater run-off volume values that fall inside an active cell in Appendix 3.0-3.15 relate to the total storm volume, Q_{totvol} , in an open area cell in

Appendix 3.0-3.4

Section 3.6.2

Demonstrate that the disposal site is designed to minimize the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal. [30 TAC §336.729(f)]

Comment: Please consider using a temporary roofing structure over the active disposal cells and storage and decontamination pads in order to minimize contact of water with waste during disposal and storage.

Comment: The response to the original comment in this section refers to “revised Section 3.5.3”. However, this section was not revised. Please reconcile this reference.

Section 4.2

Describe construction of the disposal facility, including construction methods of the disposal units. [30 TAC §§336.707(5), 305.54(f)]

Comment: Provide maps to show how the traffic access corridors will change over time, specifically describe and show the “serpentine-type” ramps, which will provide access to the FWF cells.

Comment: Please submit detailed construction plan drawings.

Section 5.2

The applicant shall provide a Waste Analysis Plan which describes [THSC §§401.218, 401.225]:

5.2.1 The Applicant’s protocol for waste acceptance, classification, and rejection criteria.

5.2.2 All analysis and inspection techniques, including any analytical procedures to be used.

5.2.3 A description of how the facility will ensure waste and/or debris arriving at the site matches the waste and/or debris designated on accompanying shipping tickets.

5.2.4 A description of the specific provisions and actions the applicant will take if the materials do not meet low level radioactive waste specifications or are improperly processed or packaged.

5.2.5 Normal characteristics of the waste which must be known in order to store, process, or dispose of the waste and debris; and any abnormal characteristics which may upset further treatment or processing operations.

Comment: The applicant has provided several procedures dealing with radioactive waste acceptance, parts of which are found in WCS Operating Procedures OP-2.0, “Waste Acceptance Procedure”, RS-4, “Documentation of Radiological Surveys”, and RS-10, “Radioactive Material

Receipt, Staging and Release Surveys.”, and other components may yet be found in other sections of the application. In general, these procedures provide a necessary overview of the operation; however, they do not follow an integrated approach, and most important they are lacking in specificity and accountability. Please submit waste acceptance procedures based upon the following comments:

1. Please provide the frequency and circumstances for conducting remote visual inspections, radiological surveys, contamination surveys, and radioactive waste classification verifications.
2. Please provide the circumstances for notifying the resident TCEQ inspector. Ensure that procedures follow the WCS QA/QC plan for addressing non-compliance/non conformance items and that regulatory agencies are notified as required by law, when rule or permit requirements are exceeded.
3. Additional procedures are required to address labeling, marking, manifesting, and placarding for waste received or shipped for intra-site transfers. Describe which procedures and form(s) will be used in each instance and provide a copy of the form(s) in the applicable procedures.
4. Procedures will need to address receipt, handling, verification, processing, and disposal of bulk waste destined for either the compact or federal facility disposal area. These procedures should include specifics such as: (1) types of transporting vehicles; (2) types of drums, casks, and over packs to be used; (3) placard markings and labeling of containers; (4) personnel protective equipment and instrumentation to be used during the inspections and surveys; (5) shielding requirement used during inspection and off loading activities; (6) location(s) where the waste acceptance activities and tasks will take place; (7) under what circumstances or conditions (i.e., inclement weather, operating problems in the disposal cells) receipt and offloading of waste will not take place; and (8) what treatment, processing and/or stabilization techniques will be used for specific wastes and where at the facility these activities will take place. Procedures will need to be modified to address acceptance or rejection of LLRW if rail cars will be bringing the waste onto the site. Please be clear when describing all types of transport that will be used to receive, transfer, or ship LLRW.
5. Please provide the same information, listed in item 4 above, for mixed waste. If mixed waste will be received, handled, and disposed of in bulk then WCS will need to address in their implementing procedures the steps which will be used to stabilize this waste to meet the requirements of 30TAC336.362(b)(2) and land disposal restrictions under 30TAC335, “Industrial Hazardous Waste and Municipal Solid Waste.” Also address how water from the cells will be managed, monitored, and analyzed as required by 30TAC336.733(c).
6. Sections 5.3.2. and 5.3.3 of the application state that waste acceptance activities will take

place in the demurrage area or parking lot and so will be under the jurisdiction of the TCEQ for permitting and regulating purposes. This is also the area where demurrage of LLRW will take place. WCS will need to have procedures which address demurrage of waste packages and vehicles. These implementing procedures should address, at a minimum: (1) surveys, inspection, and monitoring requirements for the demurred waste; (2) types of vehicles, containers, volumes, concentrations, and time duration limits on these demurred quantities of LLRW; (3) provisions for alternative parking areas for employees and visitors while waste is being stored in the parking lot; (4) methods for any processing, treatment, stabilizing, or repackaging to be done in the parking lot; (5) criteria and method for initiation of non-compliance reports; and (6) notification and reporting to the resident inspector and/or other appropriate regulatory agencies.

7. The application will need to state that the TCEQ Resident Inspector(s) will have access to all processing/treating facilities at the site, whether under TCEQ's jurisdiction or not, so that the inspector will be able to view all handling, treatment, processing, and transport for LLRW which is intended for disposal at either the compact or federal disposal facilities.
8. Please ensure that the application and implementing procedure(s) address methods to prevent potential conflict of interest in the case where waste, that is rejected for immediate disposal and is sent to the on-site processing facility, can be accepted in such a way that all quality controls are maintained.

Comment: The following comments pertain to RS-10, "Radioactive Material Receipt, Staging and Release Surveys:"

1. Section 5.1.4 of RS-10 mentions a transition lay down area. Please indicate where this area will be and provide procedures for protection of workers during the handling, survey and inspection of waste at this lay down area.
2. RS-10, section 5.3.1.1, which discusses incoming vehicle and package surveys, appear to conflict with section 5.3.9 and 5.3.10 of OP-2.0, "Waste Acceptance Procedure." Please clarify in both procedures: (1) when shipments will be allowed to enter the facility; (2) where in the facility the shipments will be demurred; (3) how shipments arriving after normal working hours, weekends and holidays will be received or if they will be received; and (4) the surveys and inspections to be done for waste received during these off-normal hours.

Note: It is important that any shipment received during off-normal hours be handled with the same high level of quality control as is required during normal work hours.

Procedures for waste which arrived during off-normal hours should include: (1) a schedule of the facility working days and hours, including weekends and holidays; (2) specific hours of the day when waste will be accepted; (3) waste and vehicle surveys and inspections requirements; (4) specify the number and training of personnel that will take

care of these off-hour situations; (5) provide these individuals with the authority to call in additional personnel especially during situations where there are spills, leaks, defective containers, or other abnormal situations.

Section 5.5.1

Provide an Operating and Emergency Procedures Manual that provides detailed procedures for receiving, handling, storing, processing, and disposal of waste. Emergency procedures shall include a spill detection and cleanup program for the site and associated transportation of waste. [THSC §§401.112(a) (12), 401.112(a)(16)] & [30 TAC §336.707(9)]

Comment: In addition to procedures listed as Administrative Deficiencies in Attachment. 1, Table 1, of this ANOD letter, the TCEQ has determined that additional information is required regarding other operating procedures. Please provide additional information or discussion about the following:

- Equipment Control Procedures [30 TAC §336.707(5), NUREG-1199, Section 4.2, and WCS App., Section 5.5.3]
- Management Radiation Safety Annual Review [30 TAC §336.304(c)]
- Employee Safety Feedback [30 TAC §305.54(e), NUREG-1199, Section 8.6]
- Heavy Equipment and Safety Device Testing, Certification, and Inspection [30 TAC §305.54(e), and NUREG-1199, Section 8.6]
- Annual Industrial Health and Safety Program Audit [NUREG-1199, Section 8.5, and WCS Procedure QA-18.1, 4.3.2.2]
- On-Site Generated Waste Disposal and Contaminated Waste Disposal (including contaminated water management) [30 TAC §305.54(e) and NUREG-1199, Section 8.6]
- Waste Disposal Facility Monthly Inspections [WCS Quality Assurance Program and WCS Procedure QA-18.1, 4.3.2]
- Operator Qualifications Requirements [30 TAC §305.54(e), NUREG-1199, Section 8.6]
- Radiation Safety Committee [30 TAC §336.304(c)]
- Uncontaminated Water Management [NUREG-1199, Section 8.6]
- Temporarily Demurraged Waste Disposal [30 TAC §§336.323, 324, & 331]
- Hazard Communication Procedure [30 TAC §305.54(e), NUREG-1199, Section 8.6, and Chapter 502 of the Health and Safety Code, Texas Hazard Communication Act]
- Annual Environmental Management Program Audit [NUREG-1199, Section 8.6 and WCS App., QA-18.1, 4.3.2.2]

Section 5.7.1

Provide a description of the facility electronic record keeping system as required in 30 TAC §336.740(i) (relating to Maintenance of Records and Reports). [30 TAC §336.707(11)]

Comment: This item does not appear to have been addressed in the WCS's most recent application revision. As stated in our previous letter, Appendix 5.7.1 provides a users manual for

the WasteSoft program being used by WCS. However, this new appendix does to constitute an electronic record keeping system. Implementing procedures will be needed to demonstrate how this software and other electronic records will be handled to meet the requirements 30 TAC §336.740(i). Other aspects still need to be addressed such as maintenance of the software, archiving of data, and reporting requirements. In addition, the WasteSoft users manual appears to be missing information that would provide an introduction and overview of the software. Please provide any additional information that may describe and document the WasteSoft software. We also ask that you provide procedures which ensure that the requirements of 30 TAC §336.740(i) have been met.

Section 11.9.1

A pre-operational monitoring program shall be conducted to provide basic environmental data on the disposal site characteristics. For those characteristics that are subject to seasonal variation, data must cover at least a 12-month period. The report shall address the following topics: [30 TAC §336.731(a)]

- (1) Meteorological Baselines**
- (2) Hydrology and Water Quality**
- (3) Terrestrial Environment**
- (4) Radiological Baselines**

Comment: The applicant has submitted a good, but generalized, plan for providing basic environmental data on the terrestrial environment in the revised application; however, more specific information is needed. For instance, will the methods utilized in the 2004 updates of the 1996-97 inventories continue to be used throughout the various facility phases? What radioecological thresholds will be used to evaluate those species potentially affected by site radiation? What criteria will be used to establish the reference areas that are to be used for determining baseline changes and restoration/mitigation success? How will plant productivity be measured? How will the ecological values depicted in Figure 11.9.1-1 be determined? (The revised application states that a detailed description of this “ecological values” approach is provided in Reagan (2002), but this citation did not appear in the references for this section). Please elaborate on these issues and provide any additional specific information that would aid in the understanding of the proposed monitoring program.

Regarding radioecological thresholds, DOE has finalized its technical standard “A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota” (DOE-STD-1153-2002). It is recommended that WCS review this and other available literature regarding risk to ecological receptors from radionuclides. This standard, along with tools for implementing the methodology can be found at: <http://homer.ornl.gov/oepa/public/bdac/>. Oak Ridge National Laboratory (ORNL) also has several publications on this subject, including a report

implementing a screening method for evaluating radiation impacts to biota that contains biota concentration guidelines and uptake factors. The ORNL site is found at: <http://www.esd.ornl.gov/programs/ecorisk/radionuclides.html> . In addition, the New Mexico Environmental Department has developed a screening level radioecological risk assessment guidance document that should also be examined. This document can be found at: <http://www.nmenv.state.nm.us/hwb/data/eco%20risk.pdf>.

Section 11.9.2

During the land disposal facility site construction and operation, the licensee shall maintain a monitoring program. Measurements and observations shall be made and recorded to provide data to evaluate the potential health and environmental impacts during both the construction and the operation of the facility and to enable the evaluation of long-term effects and the need for mitigative measures. The monitoring system shall be capable of providing early warning of releases of radionuclides and chemical constituents before they leave the disposal site boundary. The applicant's report shall address the following topics: [30 TAC §336.731(b)]

- (1) Meteorological Monitoring System**
- (2) Hydrological Monitoring System**
- (3) Ecological Monitoring System**
- (4) Radiological Monitoring System**

Comment: The applicant has submitted a good conceptual framework for ecological monitoring in the revised application; however, more specific information is needed. Please elaborate on the “acceptable ranges” that will be used to discern trends or abrupt changes in important ecological parameters when data are compared to baseline. What are the other “acceptable ranges” besides the one example indicated? Please provide the purpose and a detailed explanation of each of the boxes in Figure 11.9.2-1. Also see the related comments under Section 11.9.1.

TABLE 2

APP. SECTION	REFERENCE	WHAT IS NEEDED
--------------	-----------	----------------

SECTION 2: SITE CHAR., pp. 2-39; 2-61.	Bally, A.W., et. al., 1989.	Provide copies of pp. 1-15.
SECTION 2: SITE CHAR., pp. 2-45; 2-61.	Dutton, A.R., 1995.	Provide copies of pp. 221-231.
SECTION 2: SITE CHAR., pp. 2-37; 2-41; 2-52; 2-61.	Freese, R.A., 1979.	Provide reference to the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR. pp. 2-37; 2-43; 2-62.	Holliday, V.T., 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, pp. 2-36, 2-62.	NOAA. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-62.	NOAA. 2002.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-62.	NOAA. 2002a.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-41.	Price and Henry. 1985.	Provide a copy of the document.
SECTION 2: SITE CHAR, p. 2-62.	Rainwater. 1996.	Provide a copy of the document.
SECTION 2: SITE CHAR, pp. 2-36; 2-39; 2-63.	Sanford, A., et. al. 1993.	Provide a copy of the document.
SECTION 2: SITE CHAR, p. 2-63.	Sanford, A.R., et. al. 2002.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-63.	SCS. 1974a.	Provide a copy of the document.
SECTION 2: SITE CHAR., pp. 2-42; 2-63.	Terra Dynamics, Inc., 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 2: SITE CHAR, p. 2-63.	TWDB. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR., p. 2-64.	USGS (<i>Note: the author may actually be New Mexico Tech, Earth & Environmental Science Department</i> instead of USGS). 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR., pp. 2-36; 2-64.	USGS. 1996.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-64.	Weather Disk Association, Inc. 1990.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, p. 2-36.	Zoback and Zoback. 1991.	Provide a copy of the document.
SECTION 2: SITE CHAR, pp. 2-31, 2-61; and APPENDIX 2.3.1, p. 2.3.1-47.	Bomar. 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 2: SITE CHAR, pp. 2-32, 2-62; and APPENDIX 2.3.1, p. 2.3.1-47.	Grazulis. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38.	ACI, 2002, Building Code Requirements for Structural Concrete and Commentary, ACI 318-02/318R-02, Farmington Hills, MI.	Provide a copy of the document.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 5413-93 (2002)	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 596-01	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, pp. 3-22, 3-38.	ASTM 6145-97 (2002)	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38.	ICC. 2003.	Provide a copy of the document.

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 3: DESIGN, p. 3-22; APPENDIX 3.0-1, p. 3.0-1-41.	AASHTO, 2004. Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 24 th Ed., Wash., D.C.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 3: DESIGN, p. 3-38. APPENDIX 3.0-1, p. 3.0-1-41.	ACI, 2001, Guide to Durable Concrete, ACI 201.2R-01, Farmington Hills, MI.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2001.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2002.	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ACI. 2003	Provide a copy of the document.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2001.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2003. ASTM Publication C33-03.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2003. ASTM Publication C39/C39M-03.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	ASTM. 2004.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 5: OPERATION, p. 5-35.	EPA, 2004, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, EPA Publication No. SW-846, Wash.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 8: Performance Assessment, pp. 8-37; 8-12.	DOE, 1999. "Commercial Disposal Policy Analysis for Low-Level and Mixed Wastes," March 9, 1999.	Provide a copy of the entire document or it's location on the web.
SECTION 9, QUAL. ASSUR., p. 9-37.	ASME. 2001.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
SECTION 9, QUAL. ASSUR., pp. 9-4, 9-37.	NRC. 1988.	Provide copies of the relevant section(s), chapter(s), and/or pages.
SECTION 11.9.1, p. 11-45A.	Reagan. 2002.	Provide a copy of the document.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Draxler. 1981.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-6, 2.3.1-47.	Miller, et. al. 1973.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, p. 2.3.1-47.	NOAA. 2004.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Tornado Project. 1996a.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.3.1, pp. 2.3.1-7, 2.3.1-47.	Tornado Project. 1996b.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 2-3, 7-1.	Aki, K., 1983, <i>Seismological Evidence in Support of the Existence of Characteristic Earthquakes: Earthquake Notes</i> , v.54, p 60-61.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-2, 7-2.	Hovorka, S.D., 2001, <i>Evaporite Deposition in the Midland Basin - End of an Era (abs.)</i> , West Texas Geological Society Fall Symposium.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-2, 7-3.	Joh, S.H., 1996. <i>Advances in Interpretation and Analysis Techniques for Spectral Analysis of Surface Waves (SASW) Measurements</i> . PhD Dissertation, The University of Texas at Austin.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-3, 4-3, 7-3.	Machette, M.N., 1998. <i>Contrasts Between Short and Long Term Records of Seismicity in the Rio Grande Rift - Important Implications for Seismic Hazard Assessments in Areas of Slow Extension</i> . W.R. Lund (ed.) Western States Seismic Policy Council Proceedings Volume, Basin and Range Province Seismic Hazards Summit, Utah Geological Survey Miscellaneous Publication 98-2.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 3-4, 7-3.	Orr, C.D., 1984. <i>A Seismotectonic Study and Stress Analysis of the Kermit Seismic Zone, Texas</i> : PhD Dissertation, University of Texas at El Paso.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-3, 6-4, 7-4.	Silva, W.J., Abrahamson, N.A., Toro, G., and Constantino, C., 1997, <i>Description and Validation of the Stochastic Ground Motion Model</i> . Unpublished report prepared for the Brookhaven National Laboratory.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.5.2: Seismic Hazard Eval., pp. 6-1, 7-4.	Stokoe, K.H., II, Wright, S.G., Bay, J.A., and Roeset, J.M., 1994, <i>Characterization of Geotechnical Sites by SASW method</i> , ISSMFE Technical Committee 10 for XIII ICSMFE, Geophysical Characteristics of Sites, p. 795-816.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-1.	Bolden, G.P. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-1.	Bodvarsson, G.S., and Y. Tsang (ed). 1999.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-2.	Bodvarsson, G.S., et. al. 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-3.	Electric Power Research Institute (EPRI). 1993.	Provide a copy of the document.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hawley, J.A. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hills, J.M. 1963.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-5.	Hills, J.M. 1985.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Kelley, V.C. 1980.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Lehman, T.M. 1994a.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 2.6.1: Geology Report, p. 7-6.	Lehman, T.M. 1994b.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-6.	Liu, H.H., et. al. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-7.	Osterkamp, W.R., and W.W. Wood. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-8.	Powers, D.W., and R.M. Holt. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-8.	Pruess, K. (Ed.). 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 2.6.1: Geology Report, p. 7-9.	WTGS. 1976.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Buffington, L.C., and C.H. Herbel, 1965.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Casper, B.B., and R.B. Jackson, 1997.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Cline, J.F., 1979.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Cline, J.F., et. al., 1982.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Depoorter, G.L., 1982.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-38; 3.0-1-41.	Hackonson, T.E., 1986.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Helm, V., and T.W. Box, 1970.	Provide a copy of the document.
APPENDIX 3.0-1	ICC (Int'l. Code Council), 2003. 2003 International Building Code®, Falls Church, VA.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Jackson, R.B., et. al., 1999.	Provide a copy of the document.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-41.	Knopf, F.L., 1994.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-42.	Schenk, H.J., and R.B. Jackson. 2002a.	Provide a copy of the document.
APPENDIX 3.0-1, pp. 3.0-1-40; 3.0-1-42.	Schenk, H.J., and R.B. Jackson. 2002b.	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - (recorded wind events for Andrews County area)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - [IBC (2003) conversions of wind speed to wind pressure]	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-2.	- <i>UNKNOWN REFERENCE</i> - (flying projectile impacts based on nuclear facility guidelines)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-3.	- <i>UNKNOWN REFERENCE</i> - [IBC/National Electric Code (NEC) for electrical service, switchgear, and components]	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-8.	- <i>UNKNOWN REFERENCE</i> - (ASTM D5519 for rock armor)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-9.	- <i>UNKNOWN REFERENCE</i> - (Currently available waste generation projections for DOE/NNSA)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-12.	- <i>UNKNOWN REFERENCE</i> - (RCRA requirements)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-14.	- <i>UNKNOWN REFERENCE</i> - (Permeability tests conducted on gravel samples from Andrews County)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-21.	- <i>UNKNOWN REFERENCE</i> - (SAP2000 computer program)	Provide a copy of the program, user manual, input and output.
APPENDIX 3.0-1, p. 3.0-1-22.	- <i>UNKNOWN REFERENCES</i> - (ASTM - C39, C150, C33, C260, A185)	Provide copies of these standards.
APPENDIX 3.0-1, p. 3.0-1-23.	- <i>UNKNOWN REFERENCES</i> - (ASTM A-615; ACI SP-66)	Provide copies of these standards.
APPENDIX 3.0-1, p. 3.0-1-33.	- <i>UNKNOWN REFERENCE</i> - (UBC/IBC ground acceleration)	Provide a copy of the document.
APPENDIX 3.0-1, p. 3.0-1-34.	- <i>UNKNOWN REFERENCES</i> - (ASTM D1556, D2937, D2167, and D2922)	Provide a copy of the document.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 3.0-1, p. 3.0-1-37.	- <i>UNKNOWN REFERENCE</i> - (Appendix A, and Appendix B)	Provide copies of these appendices.
APPENDIX 3.0-1, p. 3.0-1-38.	- <i>UNKNOWN REFERENCE</i> - (Cine, et. al., 1982 - typo??)	Provide a copy of the document.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2002. 1544-500-3300/3340.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2004. Env. 18 05 0401.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	Means. 2004. Env. 33 14 1348.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 6.1.5-1, p. 6.1.5-1-2.	URS est. from Means Fitting Costs.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-27.	NRC. 1978.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-27.	NRC. 1984.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-6; 8.0-1-7; 8.0-1-21; 8.0-1-24.	RAE. 2000.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-1, pp. 8.0-1-15; 8.0-1-24; 8.0-1-27.	TAMU. 1995.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, pp. 8.0-2-3; 8.0-2-7; 8.0-2-14; 8.0-2-27.	DOE. 1998.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, pp. 8.0-2-3; 8.0-2-24.	DOE. 1999.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 8.0-2, p. 8.0-2-24.	DOE. 2000.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-4.	American Nuclear Society, ANSI/ANS-5.10-1998, <i>Airborne Release Fractions at Non-Reactor Nuclear Facilities</i> , May 11, 1998.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	Hughs Associates, Inc., WHC-SD-SQA-ANAL-501, <i>Fire Protection Guide for Waste Drum Storage Arrays</i> , September 16, 1996.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-7.	Till, J.E., and H.R. Meyer, 1983, <i>Radiological Assessment: A Textbook on Environmental Dose Assessment</i> , NUREG/CR-3332, ORNL-5986, U.S. Nuclear Regulatory Commission, Division of Systems Integration, Washington, D.C.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-7.	Turner, D. B., <i>Workbook of Atmospheric Dispersion Estimates</i> , Research Triangle Park, North Carolina, 1969 and 1974.	Provide copy of section in textbook containing Table 8.0-5-3.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, DOE/EIS-0212, <i>Final Environmental Impact Statement for Safe Interim Storage of Hanford Tank Wastes</i> , October 1995.	Provide the section and page number where information was taken from the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-10.	United States Department of Energy, DOE-HDBK-3010-94, <i>Airborne Release Fractions/Rates and Respirable Fractions for Non-Reactor Nuclear Facilities</i> , December 1994.	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, DOE/RL-2001-0036, <i>Hanford Site Transportation Safety Document</i> , Revision 0, October 4, 2001.	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-9.	United States Department of Energy, SAND84-0062, <i>The Transportation of Nuclear Materials</i> , December 1984.	Provide a copy of the document.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-13.	United States Department of Energy, DOE-STD-1020-2002, <i>Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities</i> , January 2002.	Provide the section and page number.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-13.	United States Department of Energy, DOE-STD-1021-93, <i>Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components</i> , July 1993 (Reaffirmed April 2002).	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-6.	United States Department of Energy, DOE-STD-1027-92, <i>Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports</i> , December 1992.	Provide the section and page number.
APPENDIX 8.0-5, ACCIDENT ASSESSMENT, p. 8.0-5-12.	United States Department of Energy, DOE/WIPP-95-2065, <i>Waste Isolation Pilot Plant Contact Handled (CH) Waste Safety Analysis Report</i> , Revision 7, June 2003.	Provide the section and page number.
APPENDIX 8.0-6: Detailed Pathway Analysis, pp. 8.0-6-6; 8.0-6-37.	Anspaugh 1975, Anspaugh, L.R., J.H. Shinn, P.L. Phelps, N.C. Kennedy, "Resuspension and Redistribution of Plutonium in Soils," <i>Health Physics</i> v. 29, pp. 571-582, 1975.	Provide copies of pp. 571-582.
APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-85.	DOE (U.S. Department of Energy), 1990, DOE/LLW-13Tg Revision 2 " <i>Environmental Monitoring for Low Level Waste Disposal Sites</i> ," <i>National Low Level Waste Management Monitoring for Low Level Waste Disposal Sites</i> ," <i>National Low Level Waste Management Program</i> , February 1990.	Provide a copy of the document.
APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-76.	Hughs Associates Inc. (HAI), 1996, WHC-SD-SQA-ANAL-501, <i>Fire Protection Guide for Waste Drum Storage Arrays</i> , September.	Provide a copy of the document.
APPENDIX 11.1.1, ENVIRONMENTAL REPORT, p. 11.1.1-36.	NRC (U.S. Nuclear Regulatory Commission), 2003, <i>Environmental Review Guidance for Licensing Actions Associated with NMSS Programs</i> , NUREG-1748, Division of Waste Management, Office of Nuclear Material Safety and Safeguards, Washington, D.C., August.	Provide a copy of the document.
APPENDIX 11.7, pp. 11.7-19; 11.7-31.	Grove. 1992.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-5; 11.7-18; 11.7-31.	Johnson. 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.

APP. SECTION	REFERENCE	WHAT IS NEEDED
APPENDIX 11.7, pp. 11.7-24; 11.7-31.	NRC. 1977.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-25; 11.7-31.	Ostmeyer. 1988.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-24; 11.7-31.	Quinn. 1992	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-19; 11.7-31.	RAE. 1993.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-11; 11.7-31.	TDPS. 1994.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-14; 11.7-31.	TRB. 1985.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-18; 11.7-31.	USBC. 2000.	Provide copies of the relevant section(s), chapter(s), and/or pages.
APPENDIX 11.7, pp. 11.7-11; 11.7-18; 11.7-31.	Weiner. 2003.	Provide copies of the relevant section(s), chapter(s), and/or pages.